


# FINAL PROJECT ASSIGNMENT

**Publicly Available**

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|---|--|--|---|--|
| Identification  | Name: <b>Gulyás László János</b>                                 |  | ID: <b>77216188691</b>                                |  |
|   | Code of the Curriculum: <b>2N-MW0</b>                            | Specialisation: <b>2N-MW0-FM</b>                                 | Document ref. number: <b>GEÁT:2023-1:2N-MW0:Y6IWO</b> |  |
|   | Curriculum: <b>Gépészeti modellezés mesterképzési szak</b>       |  |   |  |
|   | Final Project issued by:<br><b>Department of Fluid Mechanics</b> | Final exam organised by:<br><b>Department of Fluid Mechanics</b> |   |  |
| Supervisor: <b>Dr. Vad János Gábor (71958341366), professor</b> |  |  |   |  |

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|---------------------|---------|--|
| Project Description | Title   | <b>Conceptual design on the air technology of a cheese ripening plant</b><br>Sajtérlelő telep légtechnikai koncepcionális tervezése  |
|                     | Details | <ol style="list-style-type: none"><li>Literature survey of cheese production technologies and requirements.</li><li>Formulation of a comprehensive technological specification as a basis for conceptual design, equipped with quantitative data, and basic description of selected system components.</li><li>Basic calculations on the energy balance of the plant, as an order-of-magnitude representation of overall annual energy consumption.</li><li>Energetic investigation on various scenarios of controllable fan + filter operation, in context of various maintenance (filter cleaning) schedules, as possible means of energy-efficient operation. Evaluation, in terms of energy savings relative to the overall annual energy consumption (percentage).</li><li>Basic CFD for judging the uniformity of air velocity distribution within the cheese packages. Evaluation.</li><li>Outlook; outlining the possible future smart features of the air technical system from an Industry 4.0 perspective of the cheese ripening plant, based on the project results.</li><li>Summary of the results.</li></ol> |
|                     | Advisor | Advisor's Affiliation:<br>Advisor: ,   |

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| Final Exam | 1 <sup>st</sup> subject (group)                    | 2 <sup>nd</sup> subject (group)                    | 3 <sup>rd</sup> subject (group)                                       | 4 <sup>th</sup> subject (group)    |
|            | <b>ZVEGEÁTNW02</b><br>Computational Fluid Dynamics | <b>ZVEGEÁTNW03</b><br>Fluid Mechanics Measurements | <b>ZVEGEVGNW21</b><br>Unsteady Flow in Pipe Networks<br>(BMEGEVGNW21) | <b>ZVEGEVGNX26</b><br>Hemodynamics |

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| Authentication | Handed out: <b>5 September 2022</b>  |  | Deadline: <b>9 December 2022</b>  |  |
|                | Compiled by:<br><b>Dr. Vad János Gábor (71958341366)</b><br>Supervisor   | Verified by:<br><i>Dr. Csaba Horváth (signed)</i><br>Deputy Head of Department | Approved by:<br><i>Dr. Gábor Györke (signed)</i><br>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.<br><br>.....<br><i>Gulyás László János</i> |  |  |  |