

I. IDENTIFICATION DATA

Thesis title:	Energy analysis of milk powder production line
Author's name:	Sumit Upadhyay
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Process Engineering
Thesis reviewer:	Jaromír Štancl, Ph.D.
Reviewer's department:	ČVUT v Praze, Fakulta strojní, U12118

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	easy
<i>How demanding was the assigned project?</i>	
<p>The assignment of the Thesis is a typical engineering task to analyze the current state of the technology and propose the improvements of the technology leading to the savings of energy and operational costs. The instrument to achieve these goals is to perform mass and enthalpy balances of the technology and economical evaluation of the proposed improvements. I consider the Thesis assignment as easy because future engineer should be able to handle such a task without problems.</p>	

Fulfilment of assignment	fulfilled
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
<p>The Thesis assignment was fulfilled, all tasks were sufficiently covered.</p>	

Activity and independence when creating final thesis	E - sufficient.
<i>Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.</i>	
<p>The student continuously consulted the individual steps during solving the individual tasks. However, it seems that the student did not have a very positive approach to this work. The student's ability to work independently is rather limited – too much consultation was needed.</p>	

Technical level	D - satisfactory.
<i>Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?</i>	
<p>The technical level of the Thesis is sufficient. The student has demonstrated his ability to apply the knowledge gained during his study in field of process engineering. He is able to analyze the problem, suggest necessary improvements, and evaluate its effects on economy of the technology. On the other way, in some parts of the Thesis the student did not clearly explain what he has done.</p>	

Formal level and language level, scope of thesis	E - sufficient.
<i>Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?</i>	
<p>The thesis is sufficiently extensive. Nevertheless, the problem is the presentation of the Thesis. Student often tries to describe the problem too superficially. From the formal level point of view, I can feel a certain inconsistency from the Thesis. In general, I would expect the Author to be more precise during Thesis creation – for example, there are errors in some formulas, an incomplete list of symbols, non-existing references and in some parts wrong numbering of the figures and tables.</p>	

Selection of sources, citation correctness**C - good.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The sources used in whole Thesis are completely adequate. Author has demonstrated his ability to work with literature, especially with scientific books and articles. I do not consider the Thesis to be plagiarism. The used resources are correctly cited, but the format of some references is wrong.

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

The presented Thesis is a typical job of an engineer in the field of analysis of the current state of milk powder production line and the proposal of improvements to reduce energy consumption of the processing line together with economic evaluation of the benefits of proposed improvements. Therefore, I consider the Thesis assignment level as easy because the future engineer should be able to handle such a task. The Thesis assignment was fulfilled and all tasks were sufficiently covered. The technical level of the Thesis is sufficient. The student has demonstrated his ability to apply the knowledge gained during his study in field of process engineering. The sources used in whole Thesis are completely adequate. Author has demonstrated his ability to work with literature, especially with scientific books and articles. I do not consider the Thesis to be plagiarism.

Nevertheless, the problem is the presentation of the Thesis. Student often tries to describe the problem too superficially. From the formal level point of view, I can feel a certain inconsistency from the Thesis. In general, I would expect the Author to be more precise during Thesis creation. The student continuously consulted the individual steps during solving the individual tasks. However, it seems that the student did not have a very positive approach to this work. The student's ability to work independently is rather limited – too much consultation was needed. Especially because of the quality of the work and the overall approach of the student to the Thesis creation, I decided to assess the thesis by grade E.

The grade that I award for the thesis is **E - sufficient**.

Date: **27.1.2020**

Signature: Ing. Jaromír Štancl, Ph.D., v.r.