

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:	Ing. Jaromír Štancl, Ph.D.
Reviewer's department:	ČVUT v Praze, FS, Department of process engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	ordinarily challenging
<i>How demanding was the assigned project?</i>	
I consider the assignment of the Thesis as ordinarily challenging because it is a typical job of an engineer.	

Fulfilment of assignment	fulfilled with minor objections
<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>	
Thesis assigned task were fulfilled. However, according to the obtained results it was impossible to fulfill the task about economy. It was decided to skip this task.	

Methodology	correct
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
I consider the methodology used in the Thesis as correct, even if it contains some errors in application.	

Technical level	C - good.
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
The technical level of the presented thesis is quite good, but in some parts, the student doesn't explain clearly his steps and his results. On the other side, the student demonstrated his ability to apply his knowledge not only gained during the study but from scientific literature too (especially with the application of exergetic balances which is not included in classical courses during the study).	

Formal and language level, scope of thesis	D - satisfactory.
<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>	
The formal level of the presented thesis is inferior. It is very hard to read the thesis and understand student's meanings. The used schemes are not so clear to see what changes were made to improve the efficiency of the studied processing line.	

Selection of sources, citation correctness	E - sufficient.
<i>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?</i>	
In my opinion, the Thesis is not plagiarism. All information and data taken from external sources are cited. However, the references are not in accordance with citation practices.	

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.

The strength of the work is the application of the exergetic balances of the studied milk powder processing line (even if it contains several errors) and using the six-sigma method, which is not traditional method for studies in food industry. The weaknesses of the presented Thesis are not so clear results. I am missing some recommendations for the company what they should do and what will be the benefits for the company.

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

Summarize your opinion on the thesis and explain your final grading.

The student submitted the Thesis, which contains 44 pages of the text, 11 figures, 6 tables and 0 attachments. I consider the assignment of the Thesis as ordinarily challenging because it is a typical job of an engineer. The student used exergetic balances to find problematic parts of the milk powder processing lines to improve its energy efficiency. I consider the used methodology as correct, even if it contains several errors. The Thesis is very hard to read and sometimes is hard to understand student's thoughts. In my opinion, the Thesis is not plagiarism. All information and data taken from external sources are cited. However, the references are not in accordance with citation practices.

The student elaborated his Thesis completely independently, but did not consult his work and his results continuously, which would help to eliminate errors in his work.

The grade that I award for the thesis is **D - satisfactory**.

Date: **20.8.2019**

Signature: Ing. Jaromír Štancl, Ph.D.

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